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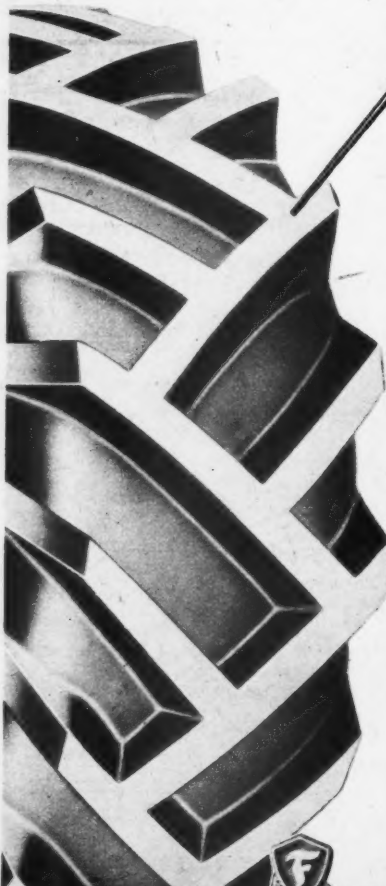
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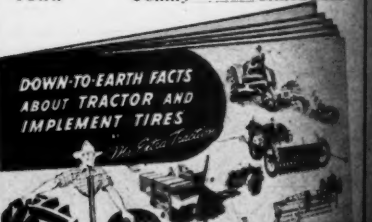
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AMERICAN FRUIT GROWER

The
NATIONAL FRUIT MAGAZINE

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THE PHENOMENON OF FRUIT PRODUCTS

THE fruit processing industry, which turns out such things as fruit juices, canned fruits, dried fruits, preserves, jams, and jellies for the American consumer, is a business in which the nation's fruit growers hold large shares of stock. It is the fruit grower who feeds this huge industry and who nursed the business into the giant that it is today. Thriving on the diet provided by the grower and on the favorable response of the consumer, the industry is growing still larger and increasing production each year. The demand for fruit juices such as apple juice and grapefruit juice has made the new growth of the industry possible and chances seem unlimited for further expansion.

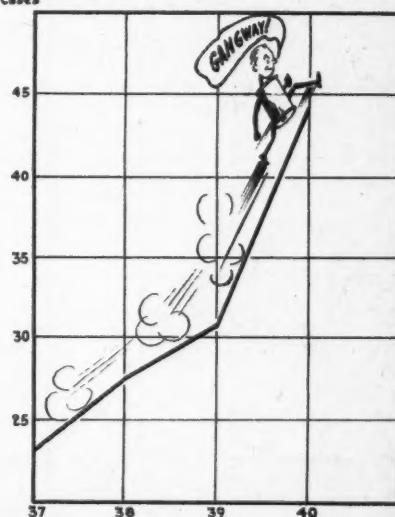
Estimates show that between five and six million gallons of apple juice were produced in the United States in 1940 and it is probable that more is being made this year. In Canada, the consumption of apple juice jumped from 400,000 gallons in 1939 to 1,500,000 gallons in 1940 and it is estimated that it will reach 3,000,000 gallons in 1941. Production of grapefruit juice in the United States has increased from 10,933,000 cases in 1939 to 16,875,000 cases in 1940. Production of all fruit juices in the United States rose from 30,849,000 cases in 1939 to 44,336,000 cases in 1940, an increase of approximately 43 per cent.

But the greatest output of the processing industry is not in fruit juices, despite their recent advances. Canned fruits alone totaled 72,212,000 cases in 1940. Production of dried fruits in 1940 was 437,749 short tons. The pack of preserves, jams, jellies, and marmalades for 1940 was estimated at 10,000,000 cases.

When these figures are added together, the full extent of the fruit processing industry and its increased output can be adequately realized. In 1940, production of canned fruits, fruit juices, and fruit preserves, jellies, jams, and marmalades totaled 126,548,000 cases, a 35 per cent increase over the 1934-38 average.

These production figures indicate the extent of the demand which has been built up for fruit products. The fruit grower now has a chance to take direct advantage of this demand by producing by himself or cooperatively with other growers high quality fruit products which can be sold to supplement the cash income from his orchard. The demand for fruit products is big and the alert fruit grower will profit from it by diversifying his selling and by merchandising his own brand of fruit products. It is time for the fruit grower to make his stock in the fruits products industry pay dividends—for himself.

Million Cases U.S. FRUIT JUICE PRODUCTION





FRUIT PRODUCTS WILL RAISE GROWER'S INCOME IN THE FARM KITCHEN • WITH SMALL FARM EQUIPMENT • BY COOPERATIVE EFFORT

By DONALD K. TRESSLER

New York State Experiment Station, Geneva, New York

IN recent years many growers have increased their annual income by operating roadside stands. Those whose orchards are located on an important highway and those who have had a variety of fruits and other products to sell have been successful in obtaining better prices for their products sold in these stands than for those sold in the wholesale markets. Some even have found the roadside stand to be the most profitable end of their business and have converted their fruits into products which can be sold throughout a large part of the year.

The list of products which can be made on the farm is very large. Some of those now being prepared from fruits are the following: frozen fruits (especially strawberries, raspberries, dewberries, cherries, currants, peaches, and apricots); fruit juices (apple, cherry, grape, peach, plum, etc.); fruit butters from apples, pears, peaches, and plums; jams, preserves and jellies of all kinds of berries, cherries, apples, pears, peaches, grapes, etc.; candied or glacé fruits from many different fruits, fruit purées, fruit syrups and honeys; ice-cream toppings and Maraschino cherries.

In a short article such as this it is obviously impossible to do much more than to indicate the possibilities of some of the more important of these products and to outline the general principles of their manufacture. Anyone interested in obtaining detailed directions for making them should consult the publications listed at the end of this article, or should write directly to the author.

Freezing is a very simple method of preserving many fruits. Now that farm freezers of both the cabinet and walk-in type are available at moderate cost, it is a very simple matter for a fruit grower to preserve his fruits so that their sale may be extended throughout the entire year. If a public cold storage, maintained at 0° F., or lower, is located in the vicinity, the easiest way is to freeze the fruits in the commercial cold storage and then, from time to time, remove a supply to a farm freezer of the cabinet type, or an ice cream holding cabinet located in the roadside stand. If a suitable cold storage is not available, the fruit grower may build his own farm freezer of the walk-in type.

To prepare fruits for freezing, they should be washed and prepared, ready for the table, and then either mixed with sugar and packaged, or placed in packages and covered with a heavy sugar syrup or a mixture of granulated sugar syrup and corn syrup. Strawberries and peaches should be sliced. Plums and apricots are best halved and pitted and then covered with syrup.

Strawberries, raspberries, youngberries, boysenberries, blueberries, cranberries, currants, tart cherries, peaches, and apricots yield especially desirable frozen products. Frozen fruits may be either sold at retail or may later be made into other products such as preserves, jams, jellies, butters, juices, syrups, ice cream toppings, candied fruits, and purées.

In recent years juices have become one of the most important fruit products, consumed in large quantities

throughout the year. Further, simple methods of preserving them have been perfected. Too many growers are accustomed to marketing cider in gallon jugs at about 25 cents per gallon when they might get 80 cents a gallon for it sold as flash-pasteurized apple juice in bottles. With the exception of the hydraulic press, the equipment required for the preparation, bottling (or canning), and pasteurization of apple juice can be constructed by the farmer himself at a very small cost. With few modifications, the same equipment can be used for the making of cherry, grape and certain other juices.

The best method of preserving apple juice is that of flash-pasteurization, which in reality is very simple. The freshly-pressed juice is strained first through a revolving screen and then through muslin. The strained juice is either pumped or allowed to flow by gravity through an aluminum or stainless steel coil surrounded by water at about 175° F. The rate of flow is maintained so that the juice is heated to 170° F. The hot juice is run into warm bottles, taking care to fill each completely. The bottles are immediately crowned and then cooled first in lukewarm and then cold water. Other juices may be preserved by the same general procedure. Cherry juice is best when clarified and filtered but other juices retain their flavors better if they are not filtered.

Preserves are prepared by cooking the whole fruits (in the case of berries) with sugar, using either a 50-50, or a 45 parts by weight of fruit to 55

(Continued on page 7)



Photo courtesy Consumers' Guide and Bureau of Home Economics, U.S.D.A.

HOW TO BUILD A BUSINESS ON FRUIT BUTTERS • JELLIES • JAMS AND PRESERVES

A POTENTIAL market of profit for both the fruit grower and the consumer lies in the canning, preserving and jelly-making of fruits directly on the fruit farm. There is a profit for the consumer because he thus can buy the finest and purest of these preserves and there is a profit for the fruit grower because he can turn surplus from the home orchard into cash at the roadside market, or in the retail stores of his community.

What it costs to can a jar of fruit, or fill a jar of jam, and how it is possible to compete profitably with the prices of large commercial companies, are prime concerns of the fruit grower. As for the equipment required, little is needed other than those usual utensils which are almost in daily use in the kitchen.

The grower's big item is the fruit which he has on his own farm. Equally important, however, is a knowledge of varieties that best are adapted to canning and of the principles for correct processing. Two factors must be adhered to closely if canned fruit is to be good. First, no delay should occur between the time the fruit is gathered and the time it is put in the cans. Secondly, sterilization should be complete if yeasts, molds and bacteria, which cause spoilage, are to be avoided.

For good jelly a fruit must have in proper proportions two essentials, pectin and acid. Some fruits lack

sufficient pectin or acidity and they should be combined with a fruit that contributes these necessary ingredients.

The fruit grower should study thoroughly all the other phases of sugar and juice combinations, boiling stages, sealing and storing for jellies, jams, marmalades, and preserves. United States Department of Agriculture leaflets and bulletins from home economic departments of state colleges will furnish much information.

Sugar is the only ingredient which must be bought by the fruit grower in any quantity. It is not recommended that it be purchased directly from the wholesaler. The fruit grower probably can get some discount from the retail grocer in his community if he orders the sugar in large quantities.

The most expensive items to be considered are the containers and jars. These can be purchased through the nearest jobber at a saving of about 20 per cent. Though not essential, attractive labels on the finished products will serve as salesmen and bring repeat orders.

With all the advantages of research findings and of modern conveniences, there is no reason why a fruit grower cannot produce uniformly excellent products and open a market of truly homemade, pure fruit preserves to the customer.

RECIPES WITH SALES APPEAL

APPLE MARMALADE

6 lbs. sugar
3 1/2 cups water
Grated rind 2 oranges
3 lemons, juice and grated rind
2 teaspoons ground ginger
6 lbs. apples, shredded

Combine sugar and water. Heat to a boil. Add grated orange and lemon rinds, lemon juice and ginger. Simmer a few minutes. Add coarsely shredded unpeeled apples and simmer for 60 minutes without stirring.

GRAPE AND ORANGE CONSERVE

1 medium sized orange
8 cups Concord grapes
Sugar
1/2 teaspoon salt
2/3 cup English walnut meats

Cut orange into thin slivers, add 1 1/2 cups of water for each cup of orange. Stand over night. Then boil and simmer until rind is tender. Cook grapes until soft, rub through coarse sieve, add cooked orange. Measure mixture adding 3/4 cup of sugar for each cup of fruit. Add salt. Cook until thick, adding nut meats just before removing from fire.

PEACH AND APPLE JAM

Use equal parts of diced peaches and apples and 3/4 as much sugar as fruit. Boil until thick and clear.

CANNED APPLE SAUCE

1 cup sugar, or
1 1/2 cups honey to 1 gal. pulp

Peel, core, soak in brine for 30 to 60 minutes. Then steam apples until soft. Run through colander, return to fire, add sugar or honey, and heat thoroughly. Pack into cans or jars and seal at once. Then process for five minutes at 212° F. in hot water bath.

SOUR CHERRY AND STRAWBERRY JAM

1 lb. ripe sour pitted cherries
1 quart ripe strawberries
6 cups sugar
1/2 bottle fruit pectin

Crush thoroughly both fruits. Mix sugar and 3 cups combined fruits, bring to full boil, stirring constantly. Boil hard one minute, remove from heat and add pectin, stirring. Skim for five minutes to cool slightly and to prevent floating fruit.

APPLE BUTTER

Cook equal measures of fruit and cider until fruit is soft, stirring constantly. Press through colander and fine sieve. Use half as much sugar as fruit pulp and 1/4 teaspoon of salt to each gallon of butter. Boil rapidly. Reduce heat as butter thickens. Stir in spices if desired.

Peach, pear, plum, and other butters are made in the same way, using water or natural juices of the fruits instead of the cider.

CRANBERRY CONSERVE

2 lbs. sound cranberries
1 cup raisins
2 oranges
3 cups sugar
1/4 teaspoon salt
1 pint water

Combine the fruits and orange peel and chop. Add sugar, salt and water. Boil 30 minutes. Stir constantly.

APPLE JUICE PACKING PLANT ON THE FARM

By GARETH O. CLARK

AN apple juice packing plant for the farm will cost from \$1000 and up, exclusive of buildings. How far up depends on the ideas of the owner and on the type of equipment used.

We are starting our third season with a plant that represents about the minimum in a cash outlay. The plant has been expanded each year so that now we have a potential capacity of about 24,000 gallons per season.

The building is a stone barn, 18 x 40 feet, which once was used for cows. Using farm help the stalls were removed, a concrete floor was laid, and the ceiling was covered with sheetrock at a cost of about \$150. A press with $\frac{3}{4}$ x $1\frac{1}{2}$ horse power motors was installed together with a bronze centrifugal pump, rotary screen and 150 gallon supply tank. The cost of these plus the wiring of the plant was \$760. Plumbing and gas connections for heating water and pasteurizing cost about \$250; miscellaneous tanks and tables were another \$75. This made our original investment amount to \$1235 without the building. Further improvements, consisting of a deaerator, extra water heater and extra heater for the pasteurizer, amounted to about \$250.

I wish at this point to give credit to Drs. D. K. Tressler, Carl Pederson and H. G. Beattie of the New York State Experiment Station, Geneva, whose cooperation made our efforts a success. No fruit grower can do better in starting a fruit juice plant than to visit his own state experiment station or Agricultural College.

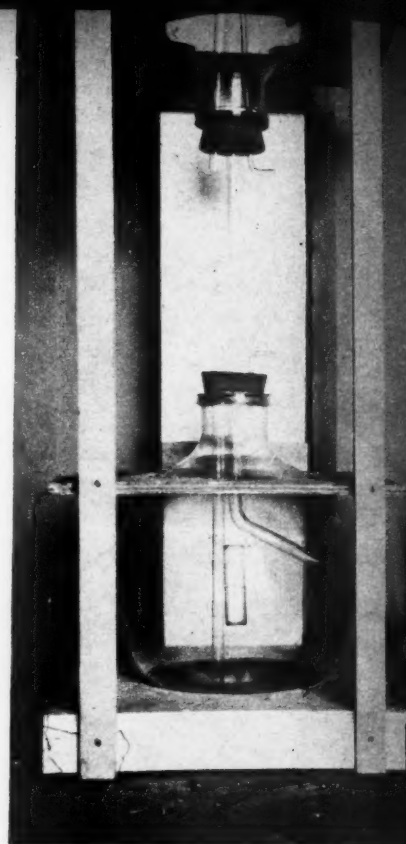
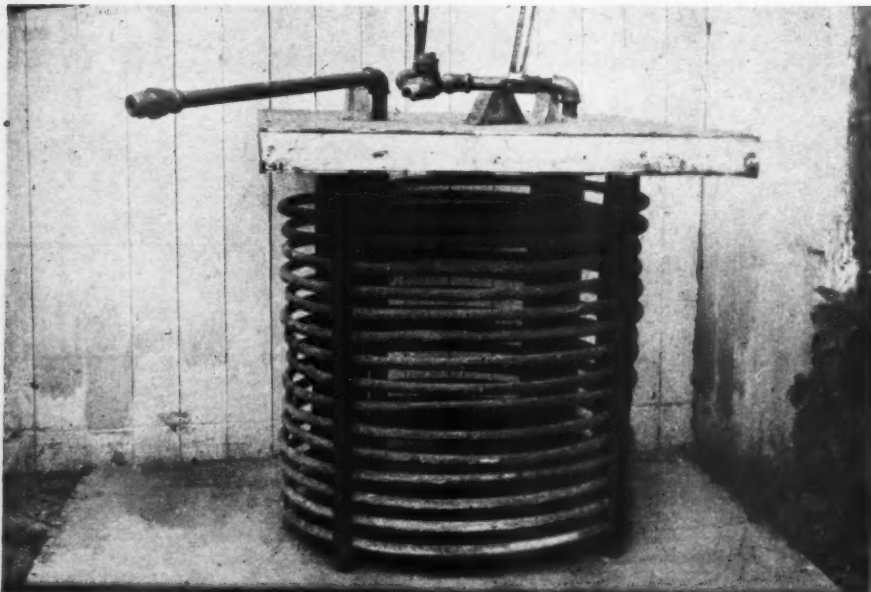
In making apple juice there is one decision to make: are you going to compete with cider makers in the low

price field, or are you going to make the best juice and charge accordingly? We chose the latter course and sold our 1939 pack at the rate of 45 cents per gallon, including bottle, for pasteurized juice. This returned a gross profit of 53 cents per bushel of apples, or a net profit of 13 cents after deducting all costs of growing, picking, grinding, etc. In 1941 this profit increased to about 25 cents.

The apples we use are sound, washed and hand-picked, showing no bruises and no worms. Blending of varieties is of utmost importance and is done before grinding.

Our method is as follows: several varieties of apples are taken to the mill and a blend is outlined, depending on the color, degree of ripeness and varieties on hand; for instance, a blend of two Baldwin, one Cortland and one Snow. This means that first we pour two bushels of Baldwins in the hopper of the press, then one bushel of Cortland and one bushel of Snow (or whatever other combination that we wish to try) and this order is continued until we have pressed out two cheeses. The juice then is pumped to the second story via a centrifugal pump and through the rotary screen into our collecting tank. We then sample the juice to determine what changes in blend are necessary. If the flavor is not satisfactory, the amounts of the various apples are changed until the desired flavor is obtained. Once the blend is determined, the press crew starts continuous operations for the day.

Juice is flash-pasteurized within this aluminum coil. Temperatures vary from 168 to over 180 degrees.



Before bottling, the juice is drawn through the glass deaerator shown above. This removes all excess air.

In bottling, the juice is drawn through a glass deaerator under as high a vacuum as can be obtained in order to remove as much air as possible. In our plant this will range from five to eight centimeters of residual pressure. Next the juice is pumped through an aluminum coil, 76 feet in length, which is immersed in a steel water tank. This tank is heated by two immersion type gas burners, having a total heating capacity of 250,000 b.t.u. per hour. The water in the tank is kept at about 10 degrees higher than the temperature of the juice as it is led into the bottles. The exact temperature of the juice at the bottle will range from 168 to over 180 degrees Fahrenheit, depending on how fast the bottling takes place. At a rate of 23 gallons per hour, 168 to 170 degrees F. give good results; at the rate of 40 gallons per hour, 172 to 174 degrees F. seem to be about right. The exact temperature must be determined experimentally.

The juice is allowed to fill the bottle so completely that no air bubbles or foam are included. Then the bottle is capped and placed on its side for two to three minutes so that the hot juice will sterilize the cap. Next it is placed in a tank of water about 130 degrees F. until a good sized air space appears in the head, after which it is transferred to a final cooling tank with running water which cools the juice to about 60 degrees. Labels now are applied and the date is stamped. The date on the label allows us to keep an exact record of each blend and of the conditions under which it was processed.

FRUIT PRODUCTS INCREASE FRUIT GROWER'S INCOME

(Continued from page 4)

parts of sugar proportion until a total soluble solids content (as determined by a hand refractometer) of approximately 67 per cent is reached. Jams are made from crushed fruit in exactly the same way.

Jellies are made by the same process, except the starting point is strained hot-pressed juice. This is prepared by boiling the fruit in a small amount of water for a few minutes and then straining the juice through a muslin bag.

The procedure followed in candying glacé fruit is relatively simple. Either the whole or the halved fruit is boiled with water for a minute or two. The water is drained off and the fruit is covered with a 30 per cent syrup prepared with equal parts of granulated sugar and corn syrup, preferably Sweetose. The fruit is heated to 180° F. in this syrup and then allowed to cool. The next day the density of the syrup is raised to 40° Brix. (about 40 per cent sugar) and then heated again to 180° F. and again the fruit is permitted to cool in the syrup. Each day the density of the syrup is raised about 10° Brix. and then heating and cooling repeated until finally the syrup reaches 80° Brix., or 80 per cent total solids. After standing in this 80° syrup for a week or two, the fruit is removed and allowed to drain. Candied fruit sells at retail for 60 cents, or even more.

Information concerning the making of syrups, ice cream toppings, Marshino cherries, etc. can be found in the publications listed below:

GENERAL BOOKS

COMMERCIAL FRUIT AND VEGETABLE PRODUCTS, 1940. By W. V. Cruess, McGraw-Hill Book Co., N.Y.C.
CANNING, PRESERVING AND PICKLING, 1937. By C. H. Campbell, Vance Publishing Corp., N.Y.C.
FREEZING PRESERVATION OF FRUITS, FRUIT JUICES AND VEGETABLES, 1936. By D. K. Tressler and C. F. Evers, Avi Publishing Co., N.Y.C.

OTHER PUBLICATIONS

MAKING GRAPE JUICE IN THE HOME, Cir. 166.
IMPROVEMENTS IN THE MANUFACTURE AND PRESERVATION OF GRAPE JUICE, Bul. 676.
THE PASTEURIZATION OF APPLE JUICE, Cir. 181.
By D. K. Tressler and C. S. Pederson, published by the N. Y. Agricultural Experiment Station, Geneva, N. Y.
CHERRY JUICE AND CHERRY BEVERAGES, Cir. 180. By D. K. Tressler, C. S. Pederson and E. A. Beavens, N. Y. Agricultural Experiment Station, Geneva, N. Y.
HOMEMADE JELLIES, JAMS AND PRESERVES. By F. W. Yeatman and M. C. Stienbarger, U. S. D. A. Farmers' Bul. 1800.
HOME PREPARATION OF JELLY AND MARMALADE, Cir. 2. By W. V. Cruess and J. H. Irish, Calif. Agricultural Experiment Station.

NOVEMBER, 1941

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AMERICAN FRUIT GROWER

PAGE 7

FRESH FRUIT IN SEASON

always



THANK the railroads for that addition to the grocer's sign. It is the swift, efficient movement of perishable crops by rail that makes it possible for every village in America to enjoy the benefits of vitamin-rich fresh fruits and vegetables throughout the year.

Rail movement makes the market for perishables national instead of local.

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And this has led to marketing associations, grading standards, stabilized price structure, a more adequate return for the producer and assurance of quality and abundant supply for the consumer.

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ARMISTICE DAY FREEZE SETS RECORD DAMAGE

By T. J. TALBERT

Missouri College of Agriculture

FRUIT growers in Missouri long will remember the injury caused by the cold and freeze of November 12-15, 1940. The full extent of the damage may not be known until at least two or three years have elapsed.

The western and northwestern parts of the State, lying west of a line drawn from Hannibal through Columbia and Springfield, represent the district damaged worst by the cold. In this region, which represents roughly one-half of the State, the injury becomes progressively more severe as one proceeds northwestward.

In the St. Joseph district, including the three or four counties where fruit is grown commercially, practically all the peach, cherry and plum trees are dead. About 75 per cent of the apple and pear trees are either dead or seriously injured.

For the extreme west central district, including the Kansas City area, somewhat less damage occurred. It now is believed that about 25 to 40 per cent of the apple and pear trees are dead or seriously injured and about 75 per cent of the stone fruits are in the same condition.

Considerably less injury may be found east of the Kansas City area, particularly in Lafayette County where apple and pear trees show a loss of about 15 to 25 per cent with peaches, cherries and plums running up to 60 to 70 per cent killed. Continuing eastward in the central district, the damage becomes progressively less and less until it is hardly noticeable when the Mississippi River is reached.

Little or no injury may be found in the southeast quarter of the state south of the Missouri River. The Southwest Missouri fruit district, including Lawrence, Green, Newton, and other adjoining counties, shows considerably less injury than the Kansas City and Jackson County district; consequently, the loss is not serious.

All investigations point to the fact that apple trees from about eight to 14 years of age suffered most from the cold. Trees, both younger and older, apparently fared better. Contrary to general belief regarding the cold damage, the greatest injury invariably occurred to trees planted on the wind-swept slopes and hills, while in the valleys, draws and other wind protected locations markedly less damage was done.

NUT GROWERS NEWS

BLACK WALNUT VARIETIES •

TO members of the Northern Nut Growers Association the tree crop program of the Tennessee Valley Authority is of great interest. L. V. Kline of the Forest Tree Crop Unit of this Authority recently reported on certain aspects of the work with black walnuts.

In this region the harvesting and the shelling of black walnuts constitute an industry of considerable importance to a certain part of the rural population. The annual income to producers of black walnut kernels is estimated at one quarter of a million dollars. In view of the importance of the crop, one of the objectives of the research program is to encourage production of high quality nuts of good varieties.

It has been shown by the Tennessee Valley Authority tests that nuts of the better varieties are worth about twice as much as the average wild nut in terms of yield of marketable kernel, when extracted by power-shelling machinery. With nuts of such varieties as Thomas, Ohio, Creitz, Edras, and Grundy, a yield of 25.8 per cent of marketable kernels was obtained. The yield of kernels from wild nuts runs from 12 to 15 per cent, according to shelling companies. When the kernels were extracted by hand methods, it was found that earned wages varied from 10 to 12 cents per hour for wild nuts, 22 cents for Thomas, and 24 cents for Ohio.

Tests have been devised for the rapid determination of quality. Also, yielding ability and general adaptability of the better varieties are being studied in a series of test orchards which are established throughout the Tennessee Valley.

Demonstration projects have been set up in which selected farmers in a few counties are furnished with grafted trees of superior walnut varieties. This is to acquaint the farmers with superior qualities of good walnuts and to inform them that such trees are available at the nurseries.

It is expected that, eventually, these farmers will become boosters for the planting of grafted trees. — GEORGE L. SLATE, Sec'y, Northern Nut Growers Assn., Geneva, N.Y.

SAVE SPRAY DRUMS TO HELP OFFSET SHORTAGE

IT may be difficult to get delivery on vital spray materials in a few months because of a shortage of shipping containers. Every grower should save 30 and 50 gallon drums which contained liquid lime sulfur and oil emulsions. Send a postcard to the manufacturer of your spray materials, giving him an inventory of your containers, and he will tell you what to do with them.

Let's do everything we can to keep our used drums in our own trade channels for our own benefit. We can aid our defense program by conserving materials and equipment wherever possible.

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The 1942 Ford Trucks, reflecting 38 years of Ford manufacturing experience, are the finest Ford Trucks ever built. Let your Ford dealer determine your requirements and specify the right Ford Truck for your farm.

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MARKETING



APPLE CANDY HELPS ROADSIDE SALES

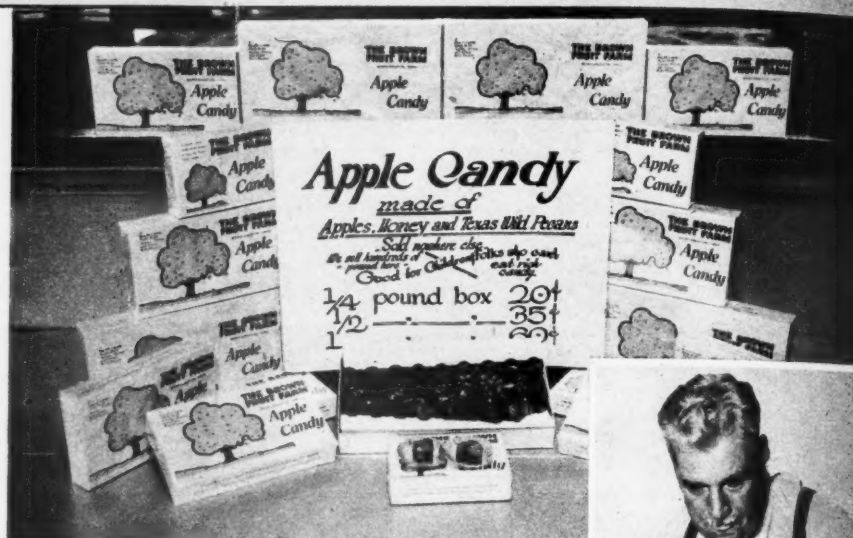
By N. F. CHILDERS and
ALLAN PURDY

THIS is a "candy age." A person needs only to be observant to see that every candy kitchen and candy shop is thriving. This statement is not an invitation for more people to enter the candy business but a reminder that greater association of the words "apple" and "candy" might not be bad business. To be sure, the apple industry could not be supported solely by the juice used in apple candy. The amount is small. However, any method which would promote greater use of the word "apple" and its association with good things to eat should not be discouraged.

The making of apple candy is not new. Fruit pastes have been a common form for preserving fruits in the tropical and Old World countries for years. Probably, the company which first brought apple candy to the attention of fruit growers and to the consuming public in America was The Liberty Orchards Company of Salem, Washington. This company introduced its apple candy, known as "Aplets," in 1920. Today it operates continuously, manufacturing from 50 to 60 tons a year of "Aplets" and "Cotlets" (made from apricot juice).

In recent years a company near Winchester, Virginia, has made considerable progress in setting up sales at many counters including even filling stations. Such a thorough promotion could occur, of course, only in a region where apple growing is a leading enterprise.

Now in Columbus, Ohio, there is a locally popular candy company, known as The Dutch Chocolate Shop, which is looking toward increased coverage of the midwest counters with apple candy. Mr. Walter Scott, Manager of the Shop, became interested in apples 12 years ago when his friend, Frame Brown of The Brown Fruit Farm, north of Columbus, Ohio, suggested that they cooperate in the manufacture and selling of an apple candy at Brown's roadside market. The venture was successful and it had twofold benefit: first, customers



Above—The Brown Fruit Farm has sold as much as 50 pounds of this candy in a single day.

Right—Walter Scott cuts the apple candy he produces in Columbus. Sales are hitting new highs.



often stopped at the roadside market to secure fresh fruit and also bought candy for their children; secondly, profit from sales of apple candy alone paid for the labor at the fruit stand during the two or three busy months in the autumn and fall seasons.

Apple candy is promoted by the fact that it is one of the very few candies on the market which contains fruit juice. It is not rich and it is especially suited to children, or to adults with delicate appetites. In the main, it consists of sucrose, apple juice, corn syrup, nut meats (usually pecans), and a small amount of coloring and flavor. It contains no cream or butter. Each manufacturer has his own secret recipe which he has taken years to perfect. The candy is especially meritorious because of the fact that it contains pectin from the apple juice which is the healthful constituent so highly recommended in fruits by Dr. Ira A. Manville of the Oregon Medical College.

Every grower who operates a roadside stand would do well to secure a

month's supply of apple candy and try to sell it over the counter with his fresh fruits. It can be shipped anywhere in the United States for about one cent a pound. Profit runs from 30 to 35 per cent on investment.

INDICATION THAT GROWERS are putting larger than usual quantities of apples into cold storage is contained in the U.S.D.A. Cold Storage Report of October 1. This year on October 1, there were 9,142,000 bushels of apples in cold storage while last year there were 8,854,000 on the same date. However, these reports are only partially complete.

MISSOURI APPLE MERCHANDISING program is well under way and receiving good support from growers, according to Henry H. Baker of the Missouri Department of Agriculture. Forty-eight large billboards advertising apples have been placed at strategic highway intersections over the State.

QUICK FREEZE CIDER

A SUCCESS STORY ON 60 ACRES OF APPLES

By RICHARD T. MEISTER

PAUL and Ralph Muckley, who operate 60 acres of bearing apple trees at Waynesburg, Ohio, have devised a new way to keep cider for year round consumption. They received the inspiration for the new process at the 1938 winter meeting of the Ohio Horticultural Society when Donald K. Tressler of the New York State Experiment Station said, "Freezing is the ideal method of preserving apple juice. . . ." They no sooner heard the idea than, presto, they turned it into fact and today they profitably freeze annually about 110 fifty-gallon barrels of cider into cider ice. Here is the secret of their process:

Only good, sound apples are used for cider. The cider is made at a commercial press at the rigid specifications of the Muckley Brothers who insist that press cloths and other equipment be scrupulously clean. An average blend consists of Grimes, Baldwins and Delicious. After pressing, the cider is allowed to stand for 24 hours to allow any sediment to settle out and then it is passed through a screen into 50 gallon barrels. Seven to 10 per cent head room is allowed so that the barrels won't burst because of the expansion of the cider when frozen. From the mill the cider is taken to a quick-freezing plant where it is quick-frozen at temperatures from five to 10 degrees below zero. It is put in storage at the freezing plant until needed. Thawing takes several days after which the cider is poured into a dispensing unit which keeps it at a temperature of about 38 degrees to avoid fermentation.

Freezing the cider makes it possible to sell cider every month of the year. It has proven profitable for the Muckley Brothers. Cider is sold at 30 cents a gallon without container and, as Paul Muckley said, "We realize a nice return." When cider is bought in the container, it is sold for 40 cents a gallon and a dime is refunded when the container is returned.

It was difficult for the Muckley Brothers to get proper containers when they first began selling cider. After using any kind of jugs which they could find, they finally decided it paid to invest in new jugs of one type which customers would return for a refund. It is possible, they said, to get a jug which once had cleaning fluid in it and fill it with cider, but the customer who drinks from this will not come back for more. Second-

ly, jugs of one type make a more eye-appealing display.

Strangely enough, the Muckley Brothers do not sell their cider during the summer time. They open in early fall and close in late spring. However, they put their cider dispensing unit on a truck and haul it around to summer fairs in Ohio and sell cider by the glass. The demand was good at the summer fairs this year and fair-goers were well impressed with the excellent apple cider.

Last year the Muckley Brothers converted 3,000 bushels of apples into cider and stepped up their business 50 per cent. "Drink a Big Apple," is the Muckley Brothers'



Paul Muckley shows how to hold cider without letting it run away. This is the frozen cider Muckley Brothers make.

slogan, and they might add, "Every Day of the Year."



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80-ACRE ORCHARD. 70 ACRES IN BEST VARIETIES of apples. 10 acres in peaches—all bearing trees—good improvements and equipment—located in southern Ohio—priced to sell. Address DR. E. R. SPENCER, Lebanon, Illinois.

120 OR 200 ACRES BEST PART MICHIGAN FRUIT Belt for apples and cherries. 9000 apple trees, popular varieties. 5000 Montmorency cherry trees, heavy bearers. Perfect air and soil drainage. All hardwood soil. No light or early fall frosts. Good for all farm crops. Superb sugar maple grove, capacity 300 gallons syrup annually. Popular resort region. Half-mile frontage on most charming inland lake in U.S. Peaches, grapes, small fruits do well. 2 sets farm buildings, extra barn. Founder and owner now past 82 and must retire. Price reasonable. JOHN WESTERN, Bay-Lake Fruit Farms, North Chicago, Ill.

LARGE CITRUS GROVE AND FARM. TERMS. J. F. CHARLTON, Fort Lauderdale, Florida.

HELP WANTED

MARRIED MAN TO MANAGE A FRUIT FARM IN Illinois. State age, experience, and furnish references. Address Box 180, Macomb, Illinois.

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WHISKEY BARRELS—\$1.50 EACH. 5—\$7.00. 10—\$13.50. 20—\$26.00. CASH WITH ORDER, ask for carlot prices. SHO-OFF ORCHARDS PRODUCTS CO., Peoria, Illinois.

PATENTS

CASH FOR INVENTIONS, PATENTED OR UNPATENTED. Particulars free. Write MR. BALL, P-9441 Pleasant, Chicago, Illinois.

NATIONAL TRADE MARK COMPANY, MUNSEY Building, Washington, D.C. Trade Mark Specialists.

POULTRY

1942 SHOULD BE POULTRY RAISERS BANNER year. Help Defense—profit yourself—raise poultry the "American Way." Read AMERICAN POULTRY JOURNAL, 549 S. Clark, Chicago. 5 years, \$1.00; 6 months, 10c.

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PAGE 12

STATE NEWS

MARYLAND—Last month the Surplus Marketing Administration bought 73 carloads of apples, many of export size, from Washington county growers. This is the first time in several years that apples have been purchased for shipment to England. These apples have been used for cider during recent years.

TEXAS—The current season's citrus production, according to A. E. Krause, Rio Grande Valley Citrus Exchange, will be about the same as last year's when approximately 13,500,000 boxes of grapefruit and 2,600,000 boxes of oranges, all varieties, were produced.

COLORADO—State Entomologist F. Herbert Gates is urging the Post Office Department and the Railway Express Agency to circularize their post offices and agencies and to get full explanation of packages, containing edibles, which are being sent to military trainees in western states. It was discovered that many of the packages contain fresh fruits from areas which are infested with the Oriental fruit moth and other pests, subject to western states' plant quarantine restrictions.

All parcels, bearing fresh fruit or any other plant product, must be so marked on the outside.

FLORIDA—A citrus grove of approximately 200 acres of Valencia, early oranges and tangerines exchanged ownership last month for a reputed cash transaction of \$50,000. This is the largest citrus deal recorded in many years. Gentile Brothers, Orlando, purchased the grove from the Mountain Lake Corporation.

NEBRASKA—Damage to apple trees by the November, 1940, freeze was worse than first was expected. Evidently, the sudden thaw out and warm wind from the south did considerable damage because old Jonathan trees which at first appeared uninjured now show a large limb or two to the south or southwest badly injured.

There is not much interest in replanting apples. Where there is some interest, it is not on the scale that it was 25 years ago. Dry years and profitless years have dampened the ardor of the older fruit growers. However, there will be quite a few peaches planted because they come into bearing more quickly.—E. H. HOPPERT, Sec'y, Lincoln.

WASHINGTON—Shippers in the Yakima area are feeling the effects of the defense program which is holding up for as many as from two to four days their shipments of apples to San Francisco and Los Angeles in preference for the transportation of defense materials and troops.

CALIFORNIA—Growers in the State are jubilant this year over the price they are receiving for dried apples which is 11½ cents per pound for extra fancy quality, the highest price in 20 years.

OREGON—Mount Adams Pear Orchard, north of White Salmon, produced what is believed to be the largest single pear crop in the world, 125,000 boxes of Anjou pears and a few thousand boxes of other varieties.

STRAWBERRY PLANTS

STATE INSPECTED AND CERTIFIED YELLOWS free Blakemore, Kionmore, Missionary and Klondyke Strawberry plants. Write for prices. R. R. McUMBER, Greenfield, Tenn.

WALNUT CRACKERS

LATEST WALNUT CRACKERS, DIRECT FROM MANUFACTURER. BENN THOMPSON, Harrisonburg, Virginia. AMERICAN FRUIT GROWER

NEW YORK—The apple market in this State was glutted as a result of the storm on September 25. Apples were rushed to market in containers of all descriptions. Quality was poor and much of the fruit was unattractive. Though growers are optimistic for fruit which is to appear later in the season, general conditions of the apple market are far from normal.



Geo. W. Kinkead

KANSAS—Mr. James N. Farley is one orchardist in the State who this year is replacing his orchard which was severely damaged by the November, 1940, freeze with the latest varieties of fruit trees. Mr. Farley has a 300-acre apple orchard near Hutchinson.

Professor George A. Dean, State Entomologist, recently expressed his appreciation to the nurserymen of the Kansas Nurserymen Association for their help in securing more adequate funds for inspection work.—GEORGE W. KINKEAD, Sec'y, Topeka.

MICHIGAN—The amount of fruit, going into cold storage this year, surpasses that of other years and Klenk Orchards and Storage Company, a leading storage plant in this State, necessarily has added an additional air conditioning unit.

The ground was covered with windfall apples as a result of the storm on September 25. The commercial apple crop of Michigan was reduced between 10 and 20 per cent.

MAINE—A truck and bus inventory is being made throughout the country at the request of the War Department and the National Defense Advisory Commission and, according to the Maine Extension Service, all owners of trucks are to be asked to help the War Department in its transportation planning for national defense.

Each truck owner will receive a card with the request for immediate return of the card with information regarding the make, the kind of body, capacity, time of year the vehicle is most urgently needed by, the owner, and whether in an emergency he would be willing to hire or lease it to a government agency. Similar facts also will be requested on all busses and freight trailers with a capacity of 3,000 pounds or more.

This inventory is expected to provide detailed records of truck and bus transportation facilities for the first time.

VIRGINIA—It was announced in Winchester that the Federal Surplus Commodity Corporation increased the price of apples, purchased for export, 10 cents per bushel which is equivalent to 30 cents per barrel. However, the local Surplus Marketing Administration announced that the price of apples, purchased under this program, remains unchanged.

MONTANA—Apple harvest in Montana was practically over by the second week in October. The yield this year was considerably larger than anticipated. With the exception of some worm damage and some hail damage in small areas, the crop was excellent, probably the best in many years. Owing to shortage of help, there was heavy loss from dropping. Plans are going forward to cover spraying operations for 1942 and for the elimination of uncared for and diseased orchards.—GEORGE L. KNIGHT, Chief Horticulturist, Missoula.

NOVEMBER, 1941

NEW

- KAN-O-JUICE DISPENSER
- PROTEGO
- BOOKLETS

KAN-O-JUICE DISPENSER •

FRUIT growers who make and can their own fruit juices will find the new Kan-O-Juice Dispenser a quick and successful sales medium for the distribution of their products.

This metal cabinet, 76" high, 41" wide and 17" deep, holds approximately 214 five and one-half to six ounce cans. Compact and sturdy, the machine constitutes one way of placing cool, ready-to-serve fruit juices before the public in a way and by a method that are new. Heretofore, refreshing fruit juices have not been available always in such places as theatre lobbies, factories, club lobbies, stores, terminals, and other places, but the presence of a Kan-O-Juice Dispenser in any one of these places is permissible.

The customer deposits a nickel, pushes an easy lever, and one can of fruit juice and two straws come from the dispenser which also is equipped with a sanitary can opener and built-in receptacle for empty cans. There are six compartments in the machine so that one or six different kinds of fruit juice may be held in the Kan-O-Juice Dispenser at the same time.

This machine is the only one of its kind on the market and offers an outlet for the sale of fruit juices that has been unexploited. Placed at a roadside market stand, it would attract customers and serve as a refreshment counter. At the same time customers would become acquainted with the fruit grower's fruit juice and larger sales would ensue. Cooperatives which have several kinds of canned fruit juices for sale would find this a worthy investment and an independent sales outlet.

Manufactured and sold in Cleveland, the Kan-O-Juice Dispenser can be operated profitably.

PROTEGO •

A spray to prevent scald, stippen, bitter rot, or blue mold in fruit that is being packed for immediate shipment is "Protego" which is applied as fruit is being run over the grader.

It is a harmless, tasteless, odorless, and colorless spray that is applied in the same style of spray gun and compressor as is used for other sprays. When only a small quantity of fruit is to be sprayed, it may be used in an atomizer.

A reduction in the shrinkage of fruit also is pronounced when "Protego" is applied and the general keeping qualities of the fruit are prolonged. "Protego" is manufactured by Protego, Incorporated.

BOOKLETS •

A new booklet on land clearing has been released by the LaPlant-Choate Manufacturing Company, Inc. It contains a resume of a complete line of modern interchangeable land-clearing tools.

The "whys" and "wherefores" of insulation are thoroughly explained in a new booklet, "Facts About the Magic of New Double Value Balsam-Wool Sealed Insulation," published by Wood Conversion Company.

NOVEMBER, 1941

"A Farm of Your Own" is the title of a recent Modern Power Farming publication, published periodically by Allis-Chalmers Manufacturing Company. It contains drawings and architectural plans of farm homes for all the regions in the country. Immensely interesting are the various styles of architecture for the different regions. The booklet presents a list of other issues



Joseph Gertner, President of Kan-O-Juice Dispenser Company, receives a blue ribbon award from Inventors of America.

which includes "Farm-to-Market Roads," "Know Your Weeds," and "More Tractor Uses."

Following are the titles of four booklets and two pamphlets which comprise the interesting "Nutrition Study Kit," recently compiled, by General Mills, Inc.:

1. Your Defense
2. Thru Highway to Good Nutrition
3. Meal Planning on a Limited Budget
4. 20 Questions on Enriched Flour and Bread
5. Personal Nutrition Record Sheet
6. The Wheat Kernel and Its Food Elements

"Paint Progress," a quarterly publication of The New Jersey Zinc Company, oftentimes bears constructive information for the uses of paint on the farm. A current issue calls attention to a painting manual for farmers which is a good general maintenance guide, useful for the maintenance of farm buildings and other fields.



BETTER fruit, larger crops, greater profits are the inevitable reward for intelligent fruit tree pruning. For years wise orchardists have specified

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AMERICAN FRUIT GROWER

LIBRARY PAGE 18

DEL. AGR. EXP. STATION

FIRST STEPS IN FRUIT GROWING

MULCHING AND MANURING

FALL means leaves and leaves mean either mulch or manure to the expert grower. Contrary to popular notion, leaves should not be burned as they contain essential nutrients and make an excellent mulch for fruit trees.

Synthetic manure for the small grower can be made from leaves and other vegetable materials by a simple recipe. First, mix 45 parts by weight of sulfate of ammonia with 40 parts of finely ground limestone and 15 parts of superphosphate. Apply about 15 pounds of this mixture to 250 pounds of dry material or 400 pounds of green material like freshly cut weeds or grass. It can be done in this fashion: dig a shallow pit about a foot and one-half deep, put a foot or so of the plant material in the pit, moisten with water, apply a few handfuls of the fertilizer and a few shovelfuls of dirt over this. Repeat until the material is about five feet high. In about five months to a year it will be rotted and ready to use.

HOGS CLEAN ORCHARD

LETTING hogs run in the orchard is a good idea because pigs eat the windfall apples which, in many cases, carry the apple maggot or railroad worm. The maggots develop slowly in the green fruit and usually do not complete their growth until the infested apple drops from the tree. If the apples are not destroyed, the worm leaves the apple and enters the ground where it is safe to live until spring when it will cause more damage.

TEST SOILS NOW

LATE fall is a good time to take samples to determine the phosphorus, calcium and potassium content of orchard soils which is important for good sod and cover-crop growth. Because orchards may have several different types of soils (for instance, soils change at different elevations), it is necessary to sample each soil type. Take a number of samples of each type and mix these samples to form a soil composite. Do not mix samples taken from different soil types. It is wise to make composite samples for both the soil and the subsoil but be careful not to mix these. Dry the composite samples, take about one-half pint of each and send in separate, clean, labeled containers to your State Experiment Station.

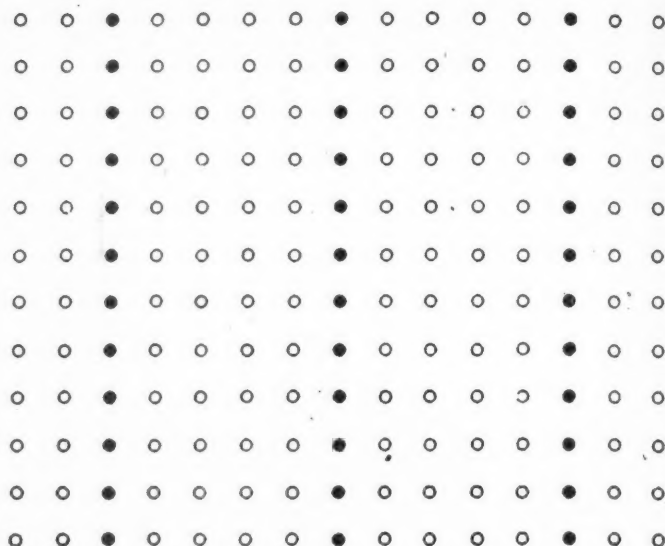
REQUIRED READING

"PACKAGING Problems of Eastern Apple Growers," Bul. 409, 1941, by W. R. Whitacre, Pennsylvania State College of Agriculture, State College.

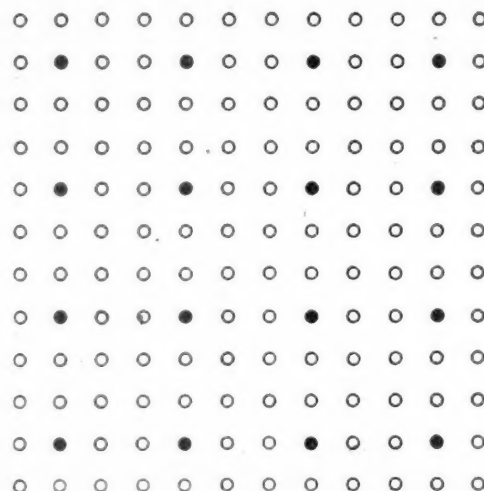
"Selling Farm Products through Roadside Markets," Bul. 466, 1941, by M. C. Bond, New York State College of Agriculture, Ithaca.

"Seven New Peaches and a New Plum for the Western States," Cir. 552, 1940, by W. F. Wight, U. S. D. A., Washington, D.C.

PLANTING PLANS FOR POLLINATION



Most apple and pear varieties should be no more than two permanent rows from the pollinizing variety. In the planting plan above, this is done by planting pollinizers in every fifth row.



Plans courtesy Ohio Experiment Station

In the plan above for apples and pears, the pollinizers are every third tree in every third row. Every permanent tree to be pollinized is adjacent to a pollinizer.

FRUIT trees are either self-fruitful—they will bear commercial crops without other varieties being within pollinating distance because they can fertilize themselves—or they are self-unfruitful—they must be pollinated by another variety (cross-pollinated) to set fruit.

Baldwin is about the only apple variety which will produce a full commercial crop without cross-pollination. All other apple varieties must be cross-pollinated for best yields. Some apple varieties have infertile pollen and will not satisfactorily cross-pollinate other trees. Baldwin, Gravenstein, Stayman Winesap, and Rhode Island Greening are some of the apples in this group.

Pear trees must be cross-pollinated for best results. Bartlett and Seckel are cross-incompatible—they are not capable of pollinating each other and no fruit will be

produced if they are planted together. They must be pollinated by other pear varieties.

All sweet cherry varieties are generally self-unfruitful and must be cross-pollinated. Napoleon, Bing, Lambert, and Emperor Francis are like Bartlett and Seckel pears, they are cross-incompatible. They must be pollinated by other sweet cherry varieties with fertile pollen. Most commercial sour cherries are self-fruitful; however, varieties like Chase and Homer must be pollinated by other sour cherry varieties. Most peach trees are self-fruitful and may be planted in solid blocks. Candoka and J. H. Hale are two self-unfruitful varieties and must be cross-pollinated.

Before planting varieties of any fruit, it is wise to make sure that proper pollination has been provided. Proper pollination will increase the set of fruit in the orchard.

CALENDAR OF COMING MEETINGS and EXHIBITS

- Nov. 12-13—Minnesota Fruit Growers Association and Minnesota State Horticultural Society meeting, Radisson Hotel, Minneapolis.—J. D. Winter, Sec'y, Fruit Growers Assn., Mound.
- Nov. 13-14—Annual Convention of the Wisconsin State Horticultural Society, West Bend.—H. J. Rahmlow, Sec'y, Madison.
- Nov. 13-14—Iowa State Horticultural Society, Iowa Fruit Growers Association, and Iowa Nut Growers Association, Ames.—R. S. Herrick, Sec'y, State House, Des Moines.
- Nov. 15-16—Oklahoma A. and M. Horticulture Department, 25th Annual Horticultural Show, college campus, Stillwater.
- Nov. 18-19—Tennessee State Horticultural Society Convention, Jackson.—G. M. Bentley, Sec'y, Knoxville.
- Nov. 18-19—New Hampshire Horticultural Society annual meeting, Carpenter Hotel, Manchester.—Alfred L. French, Sec'y, Concord.
- Dec. 1-3—Washington State Horticultural Society 37th annual meeting, Wenatchee.—John C. Snyder, Extension Horticulturist, Pullman.
- Dec. 2-4—New Jersey State Horticultural Society annual meeting, Haddon Hall, Atlantic City.—Arthur J. Farley, Sec'y, New Brunswick.
- Dec. 2-4—Joint meeting of the Michigan State Horticultural Society and the American Pomological Society in connection with the Michigan Apple Show, Civic Auditorium, Grand Rapids.—H. D. Hootman, Sec'y, Lansing.
- Dec. 4-5—Kansas State Horticultural Society annual meeting, Lawrence.—Geo. W. Kinkead, Sec'y, Topeka.
- Dec. 5-6—Montana Horticultural Society annual meeting, Hamilton.—Geo. L. Knight, Sec'y, Missoula.
- Dec. 9-11—Virginia State Horticultural Society 46th annual meeting, Roanoke.—W. S. Campfield, Sec'y, Staunton.
- Dec. 10-12—Peninsula Horticultural Society, annual meeting, Cambridge, Maryland.—T. F. Manns, Sec'y, Newark, Del.
- Dec. 11-12—Oregon State Horticultural Society annual meeting, Eugene.—O. T. McWhorter, Sec'y, Corvallis.
- Dec. 11-12—Connecticut Pomological Society annual meeting, Hartford.—H. A. Rollins, Extension Fruit Specialist, Storrs.
- Dec. 17-19—Illinois State Horticultural Society annual meeting, Urbana.—Joe B. Hale, Sec'y, Kell.
- Dec. 29-31—American Society of Horticultural Science, Dallas, Texas.—H. B. Tukey, Sec'y, Geneva, New York.
- Jan. 7-9—Massachusetts Fruit Growers Association annual meeting, Worcester.—William R. Cole, Sec'y, Amherst.
- Jan. 13-15—Indiana State Horticultural Society annual meeting, Purdue University, Lafayette.—Monroe McCown, Acting Sec'y, Lafayette.
- Jan. 13-16—New York State Horticultural Society annual meeting, Rochester.—Roy P. McPherson, Sec'y, Le Roy.
- Jan. 13—Vermont State Horticultural Society annual meeting, Memorial Auditorium, Burlington.—Charles H. Blasberg, Sec'y, Burlington.
- Jan. 20-22—Maine Pomological Society annual meeting, Lewiston.—E. L. White, Bowdoinham.
- Jan. 20-22—Pennsylvania State Horticultural Association annual meeting, Harrisburg, in connection with the Pennsylvania Farm Show.—John U. Ruef, Sec'y, State College.
- Jan. 26-28—Annual winter meeting of the Ohio State Horticultural Society in connection with the Annual Farmers' Week of Ohio State University, Columbus.—Frank H. Beach, Sec'y, Columbus.

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